

IN THE CLAIMS-

Please amend the claims as follows:

1. (currently amended) A composition of matter receptor-specific liposome for delivering an eye specific gene to an ocular cell, said receptor-specific liposome comprising:

a liposome having an exterior surface and an internal compartment;
an eye specific gene;

a plurality of targeting agents comprising blood-retinal barrier and ocular cell membrane targeting agents to provide targeting of said liposome to an ocular cell; and

a plurality of conjugation agents wherein each targeting agent is connected to the exterior surface of said liposome via at least one of said conjugation agents; and
a gene that expresses a therapeutic or diagnostic agent for said ocular cell,
said gene being located within the internal compartment of said liposome.

2. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said liposome exterior surface defines a sphere having a diameter of less than 200 nanometers.

3. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said eye specific gene is selected from the group consisting of opsin protein of rhodopsin gene, cyclic GMP phosphodiesterase α-subunit or β-subunit gene, the alpha subunit of the rod cyclic nucleotide gated channel gene, retinal pigmented epithelium-specific 65 kD protein gene, retinal binding protein 1 gene, ATP binding cassette retina gene, peripherin/retinal degeneration slow gene, rod outer segment membrane protein 1 gene, arrestin gene, alpha-transducin gene, rhodopsin kinase gene,

guanylate cyclase activator 1A gene, retina specific guanylate cyclase gene, the alpha subunit of the cone cyclic nucleotide gated cation channel gene and cone opsin genes.

4. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said eye-specific gene is located within a plasmid.

5. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein the molecular weight of said eye-specific gene is above 30,000 Daltons or wherein said therapeutic gene comprises at least 100 nucleotides.

6. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein between 5 and 1000 targeting agents are conjugated to said exterior surface of said liposome.

7. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein between 25 and 40 targeting agents are conjugated to said surface of said liposome.

8. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said conjugation agent is selected from the group consisting of polyethylene glycol, sphingomyelin and organic polymers.

9. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said blood-retinal barrier targeting agent and ocular cell membrane targeting agent is the same targeting agent.

10. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of insulin, transferrin, insulin-like growth factor, leptin and low density lipoprotein.

11 – 22 (cancelled)

23. (currently amended) A composition of matter pharmaceutical preparation comprising:

a) a receptor-specific liposome comprising:
a liposome having an exterior surface and an internal compartment;
~~an eye specific gene;~~
a plurality of targeting agents comprising blood-retinal barrier and ocular cell membrane targeting agents to provide targeting of said liposome to an ocular cell; and

a plurality of conjugation agents wherein each targeting agent is connected to said exterior surface of said liposome via at least one of said conjugation agents; and

a gene that expresses a therapeutic or diagnostic agent for said ocular cell, said gene being located within the internal compartment of said liposome; and

b) a pharmaceutically acceptable carrier for said receptor-specific liposome.

24. (currently amended) A composition of matter pharmaceutical preparation according to claim 23 wherein said blood-retinal barrier targeting agent and said ocular cell membrane targeting agent is the same targeting agent.

25. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of

peptidomimetic monoclonal antibodies that bind to the insulin-receptor on the blood-retinal barrier and peptidomimetic monoclonal antibodies that bind to the insulin receptor on the ocular cell membrane.

26. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of peptidomimetic monoclonal antibodies that bind to the transferrin receptor on the blood-retinal barrier and peptidomimetic monoclonal antibodies that bind to the transferrin receptor on the ocular cell membrane.

27. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of peptidomimetic monoclonal antibodies that bind to the insulin-like growth factor receptor on the blood-retinal barrier and peptidomimetic monoclonal antibodies that bind to the insulin-like growth factor receptor on the ocular cell membrane.

28. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of peptidomimetic monoclonal antibodies that bind to the leptin receptor on the blood-retinal barrier and peptidomimetic monoclonal antibodies that bind to the leptin receptor on the ocular cell membrane.

29. (currently amended) A composition of matter receptor-specific liposome according to claim 1 wherein said targeting agent is selected from the group consisting of peptidomimetic monoclonal antibodies that bind to the low density lipoprotein receptor on the blood-retinal barrier and peptidomimetic monoclonal antibodies that bind to the low density lipoprotein receptor on the ocular cell membrane.